ABSTRACT OF THE DISCLOSURE

The present invention provides a method for determining binding of a receptor to one or more ligands. The method consists of contacting a collective receptor variant population with one or more ligands and detecting binding of one or more ligands to the collective receptor variant population. The collective receptor variant population can be further divided into two or more subpopulations, one or more of the two or more subpopulations can be contacted with one or more ligands and one or more receptor variant subpopulations having binding activity to one or more ligands can be detected. The steps of dividing, contacting and detecting can be repeated one or more times. The invention also provides methods for identifying a receptor variant having optimal binding activity to one or more ligands. The invention additionally provides a method for determining binding of a ligand to one or more receptors. The method consists of contacting a collective ligand variant population with one or more receptors and detecting binding of one or more receptors to the collective ligand variant population. As with the variant receptor population, the methods for determining binding of a ligand to one or more receptors can include the steps of further dividing, contacting and detecting one or more ligand variants having binding activity to one or more receptors. The invention also provides methods for identifying a ligand or ligand variant having optimal binding activity.